

1 CLAIMS

2  
3 What is claimed is:

4  
5 1. A method of making a cased wellbore comprising at least  
6 the steps of:

7  
8 assembling a lower segment of a drill string comprising  
9 in sequence from top to bottom a first hollow segment of  
10 drill pipe, a latching subassembly means possessing multiple  
11 stabilizer ribs attached to the exterior of said latching  
12 subassembly means to stabilize the drill string during  
13 drilling, and a rotary drill bit having at least one mud  
14 passage for passing drilling mud from the interior of the  
15 drill string to the outside of the drill string;

16  
17 rotary drilling the well into the earth to a  
18 predetermined depth with the drill string by attaching  
19 successive lengths of hollow drill pipes to said lower  
20 segment of the drill string and by circulating mud from the  
21 interior of the drill string to the outside of the drill  
22 string during rotary drilling so as to produce a wellbore;

23  
24 after said predetermined depth is reached, pumping a  
25 latching float collar valve means down the interior of the  
26 drill string with drilling mud until it seats into place  
27 within said latching subassembly means;

28  
29 pumping a bottom wiper plug means down the interior of  
30 the drill string with cement until the bottom wiper plug  
31 means seats on the upper portion of the latching float collar  
32 valve means so as to clean the mud from the interior of the  
33 drill string;

CLAIMS  
For Dwc App. #1 Only  
11/2/2003

1           pumping any required additional amount of cement into  
2     the wellbore by forcing it through a portion of the bottom  
3     wiper plug means and through at least one mud passage of the  
4     drill bit into the wellbore;

5  
6           pumping a top wiper plug means down the interior of the  
7     drill string with water until the top wiper plug seats on the  
8     upper portion of the bottom wiper plug means thereby cleaning  
9     the interior of the drill string and forcing additional  
10    cement into the wellbore through at least one mud passage of  
11    the drill bit;

12  
13           allowing the cement to cure;

14  
15           thereby cementing into place the drill string to make a  
16    cased wellbore.

17  
18  
19    2.    Rotary drilling apparatus to drill a borehole into the  
20    earth comprising a hollow drill string possessing at least  
21    one drilling stabilizer means, the drill string attached to a  
22    rotary drill bit having at least one mud passage for passing  
23    the drilling mud from within the hollow drill string to the  
24    borehole, a source of drilling mud, a source of cement, and  
25    at least one latching float collar valve means that is pumped  
26    with the drilling mud into place above the rotary drill bit  
27    to install said latching float collar means within the hollow  
28    drill string above said rotary drill bit that is used to  
29    cement the drill string and rotary drill bit into the earth  
30    during one pass into the formation of the drill string to  
31    make a steel cased well.

32  
33  
  
CLAIMS  
For Dwc App. #1 Only  
11/2/2003

1        3.    A method of drilling a well from the surface of the  
2        earth and cementing a drill string into place within a  
3        wellbore to make a cased well during one pass into formation  
4        using an apparatus comprising at least a hollow drill string  
5        possessing at least one drilling stabilizer means, the drill  
6        string attached to a rotary drill bit, said bit having at  
7        least one mud passage to convey drilling mud from the  
8        interior of the drill string to the wellbore, a source of  
9        drilling mud, a source of cement, and at least one latching  
10       float collar valve assembly means, using at least the  
11       following steps:

12  
13           pumping said latching float collar valve means from the  
14       surface of the earth through the hollow drill string with  
15       drilling mud so as to seat said latching float collar valve  
16       means above said drill bit; and

17  
18           pumping cement through said seated latching float collar  
19       valve means to cement the drill string and rotary drill bit  
20       into place within the wellbore, whereby at least a portion of  
21       said drill string is centralized in said well while cementing  
22       said drill string into place within said wellbore by the  
23       presence of said drilling stabilizer means.

24  
25  
26       4.    A method for drilling and lining a wellbore comprising:  
27       drilling the wellbore using a drill string, the drill string  
28       having an earth removal member operatively connected thereto  
29       and a casing portion for lining the wellbore; stabilizing the  
30       drill string while drilling the wellbore; locating the casing  
31       portion within the wellbore; and maintaining the casing  
32       portion in a substantially centralized position in relation  
33       to a diameter of the wellbore.

**CLAIMS**  
**For DwC App. #1 Only**  
**11/2/2003**

1        5.    The method of Claim 4 wherein following the lining of  
2        said wellbore with said casing portion, said casing portion  
3        is cemented into place using at least the following steps:  
4

5            (a) pumping a latching float collar valve means from the  
6        surface of the earth through said drill string with drilling  
7        mud so as to seat said latching float collar valve means  
8        above said earth removal member, wherein said earth removal  
9        member possesses at least one mud passage to convey drilling  
10       mud from the interior of the drill string to the wellbore;  
11       and  
12

13           (b) pumping cement through said seated latching float  
14        collar valve means to cement the drill string and the earth  
15        removal member into place within the wellbore.  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33

**CLAIMS**  
**For DwC App. #1 Only**  
**11/2/2003**